## (19) World Intellectual Property Organization

International Bureau



## 1 1997) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919)

(43) International Publication Date 18 August 2005 (18.08.2005)

PCT

## (10) International Publication Number WO 2005/075793 A1

- (51) International Patent Classification7: F01B 9/00, 1/06
- (21) International Application Number:

PCT/US2004/037345

(22) International Filing Date:

8 November 2004 (08.11.2004)

(25) Filing Language:

English

(26) Publication Language:

English

- ·

(30) Priority Data: 60/537,774

20 January 2004 (20.01.2004) U

(71) Applicant (for all designated States except US): ILLI-NOIS TOOL WORKS INC. [US/US]; 3600 West Lake Avenue, Glenview, IL 60026 (US).

- (72) Inventor: and
- (75) Inventor/Applicant (for US only): SCHAUPP, John, F. [US/US]; 4524 Ruxton Road, Toledo, OH 43612 (US).
- (74) Agent: CONARD, Richard, D.; Barnes & Thornburg LLP, 11 South Meridian Street, Indianapolis, IN 46204 (US).

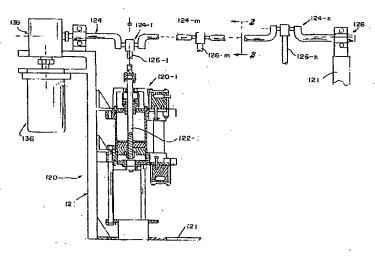
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AI., AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CII, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IIU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MATERIAL PUMP



(57) Abstract: A composite pump comprises multiple fluid pumps, each including a movable component and a crank coupled to the movable component. At least two of the movable components define between them a non-zero included angle.

2005/075793 A1